

CLAIMS

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2. (New) A vibration absorber for absorbing vibrations over a range of frequencies from a vibrating device, comprising:

a base mass for attachment to the vibrating device;

an absorber mass;

at least an element connected between the base mass and the absorber mass;

a magnetic flux path through the base mass, the absorber mass, and the element for conducting a magnetic flux;

the magnetic flux being changeable in response to a change in frequency from the vibrating device; and

the element being switchable in response to a change of the magnetic flux in the magnetic flux path,

whereby the vibrations over the range of frequencies from the vibrating device may be absorbed by the switchability of the element in response to the changeability of the magnetic flux in the magnetic flux path.

3. (New) The vibration absorber of Claim 2, wherein the element comprises a pair of elements.

4. (New) The vibration absorber of Claim 2, wherein the element comprises a substance mixed with magnetically-conducting particles that are unable to move freely.

5. (New) The vibration absorber of Claim 2, wherein the element comprises an elastomeric substance mixed with magnetically-conducting particles that has been cured so the magnetically-conducting parties are unable to move freely.

6. (New) The vibration absorber of Claim 5 wherein the elastomeric substance comprises a magnetorheological (MR) elastomer.

7. (New) The vibration absorber of Claim 2, wherein the base mass and/or the absorber mass are relatively rigid.

8. (New) The vibration absorber of Claim 2, wherein the base mass and/or the absorber mass comprise magnets.

9. (New) The vibration absorber of Claim 2, wherein the magnetic field source comprises a coil of current-bearing wire encircling the base mass and/or the absorber mass.

10. (New) The vibration absorber of Claim 2, wherein the base mass and/or the absorber mass comprises iron or low carbon steel.

11. (New) The vibration absorber of Claim 2, wherein the element is not geometrically constrained.

12. (New) The vibration absorber of Claim 2, wherein the base mass and/or the absorber mass comprises a magnet.

13. (New) The vibration absorber of Claim 2, wherein a stiffness change in the element is directly proportional to the magnetic flux that runs through the element.

14. (New) A method to absorb vibrations of a specific frequency from a vibrating device, comprising:

attaching a vibration absorber to the vibrating device;

applying a magnetic field to the vibration absorber to induce a magnetic flux in the vibration absorber; and

causing the vibration absorber to change in response to inducement of the magnetic flux so that the vibration absorber absorbs the vibrations of the specific frequency from the vibrating device.

15. The method of Claim 14, wherein causing the vibration absorber to change in response to the inducement of the magnetic flux comprises causing at least an element of the vibration absorber to change in static deflection length in response to the inducement of the magnetic flux so that the vibration absorber absorbs the vibrations of the specific frequency from the vibrating device.

16. A method to absorb vibrations from a vibrating device over a range of frequencies, comprising:

attaching a vibration absorber to the vibrating device;

with respect to absorbing vibrations from the vibrating device at a specific frequency in the range of frequencies, inducing a specific magnetic flux in the vibration absorber;

causing the vibration absorber to change in response to inducement of the specific magnetic flux so that the vibration absorber absorbs the vibrations at the specific frequency;

in response to detection of a change in frequency of the vibrations from the vibrating device, inducing a magnetic flux correlated to the changed frequency in the vibration absorber; and

causing the vibration absorber to change in response to the inducement of the magnetic flux correlated to the changed frequency so that the vibration absorber absorbs the vibrations at the changed frequency.

17. The method of Claim 16, wherein causing the vibration absorber to change in response to inducement of the specific magnetic flux comprises causing at least an element of the vibration absorber to change in static deflection length in response to the inducement of the specific magnetic flux so that the vibration absorber absorbs the vibrations at the specific frequency.

18. The method of Claim 16, wherein causing the vibration absorber to change in response to the inducement of the magnetic flux correlated to the changed frequency

comprises causing at least an element of the vibration absorber to change in static deflection length in response to the inducement of the magnetic flux correlated to the changed frequency so that the vibration absorber absorbs the vibrations at the changed frequency.
